FIG. 1

VIRUS-FREE CERTIFICATE (200)

(201)	FILE NAME
(202)	ISSUER
(203)	PUBLIC KEY VALUE
(204)	VALIDITY
(205)	SERIAL NUMBER
(206)	CERTIFICATE SIGNATURE
(207)	FILE SIGNATURE
(208)	ANTIVIRUS CHECKER 1
	ANTIVIRUS CHECKER n
(209)	CERTIFICATE STRUCTURE

Virus-free Certificate Rules Table (301)

Record (302)

File Template section (303)

File_Source (304)

File_Name (305)

File_Type (306)

File Antivirus Criteria section (307)
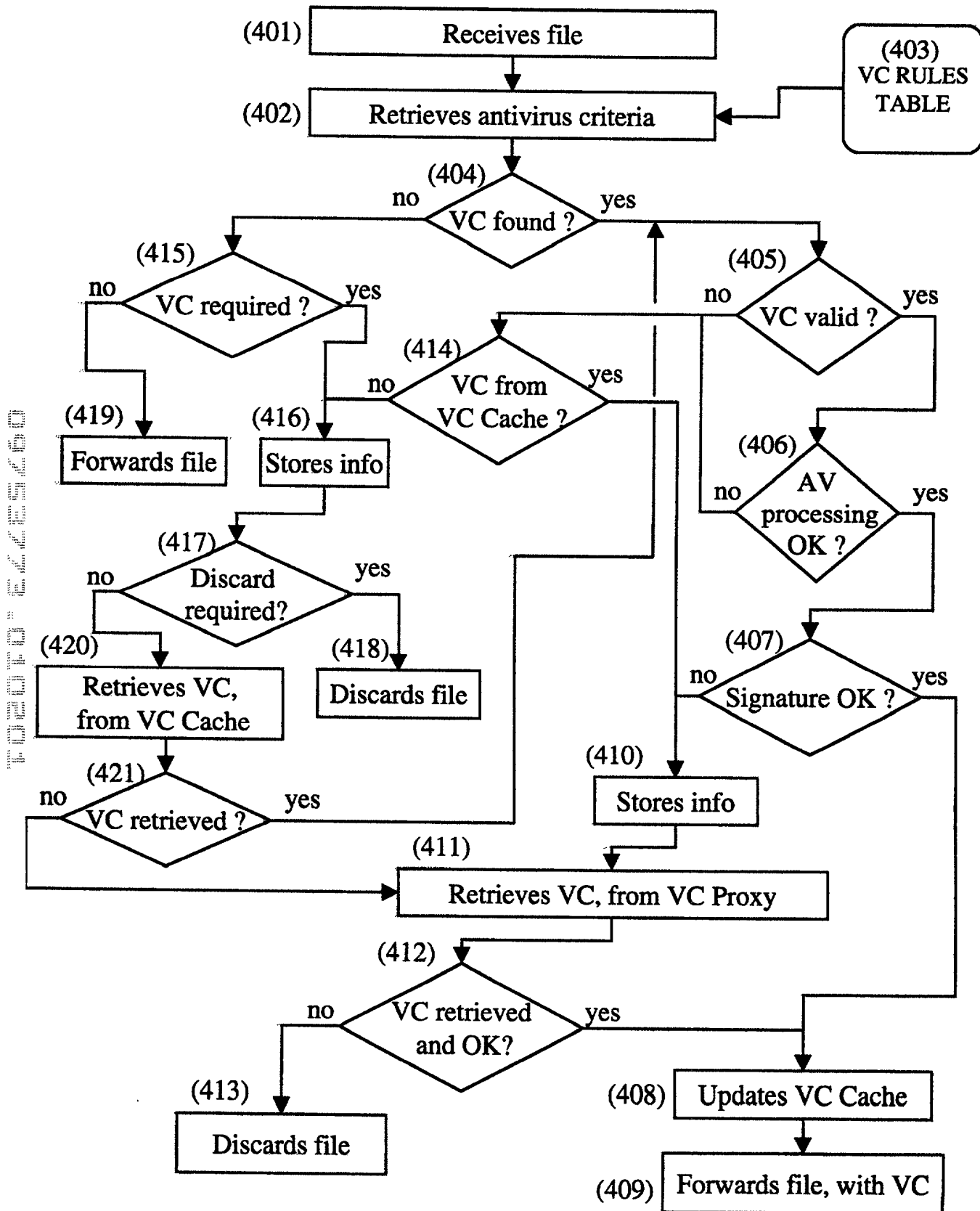
VC_Required (308)

Valid_VC_Required (309)

File_Discard (310)

Required_AV_Checker_List (311)

Record (302)

• • •

(401) Receives file

(403)
VC RULES
TABLE

(402) Retrieves antivirus criteria

(404) VC found ?
no — yes

(415) VC required ?
no — yes

(405) VC valid ?
no — yes

(414) VC from VC Cache ?
no — yes

(419) Forwards file

(416) Stores info

(406) AV processing OK ?
no — yes

(417) Discard required?
no — yes

(420) Retrieves VC, from VC Cache

(418) Discards file

(407) Signature OK ?
no — yes

(410) Stores info

(421) VC retrieved ?
no — yes

(411) Retrieves VC, from VC Proxy

(412) VC retrieved and OK?
no — yes

(413) Discards file

(408) Updates VC Cache

(409) Forwards file, with VC

Virus-free Certificate Cache Table (501)

Record (502)

File section (503)

File_Name (504)

File_Type (505)

File_Size (506)

File_CRC (507)
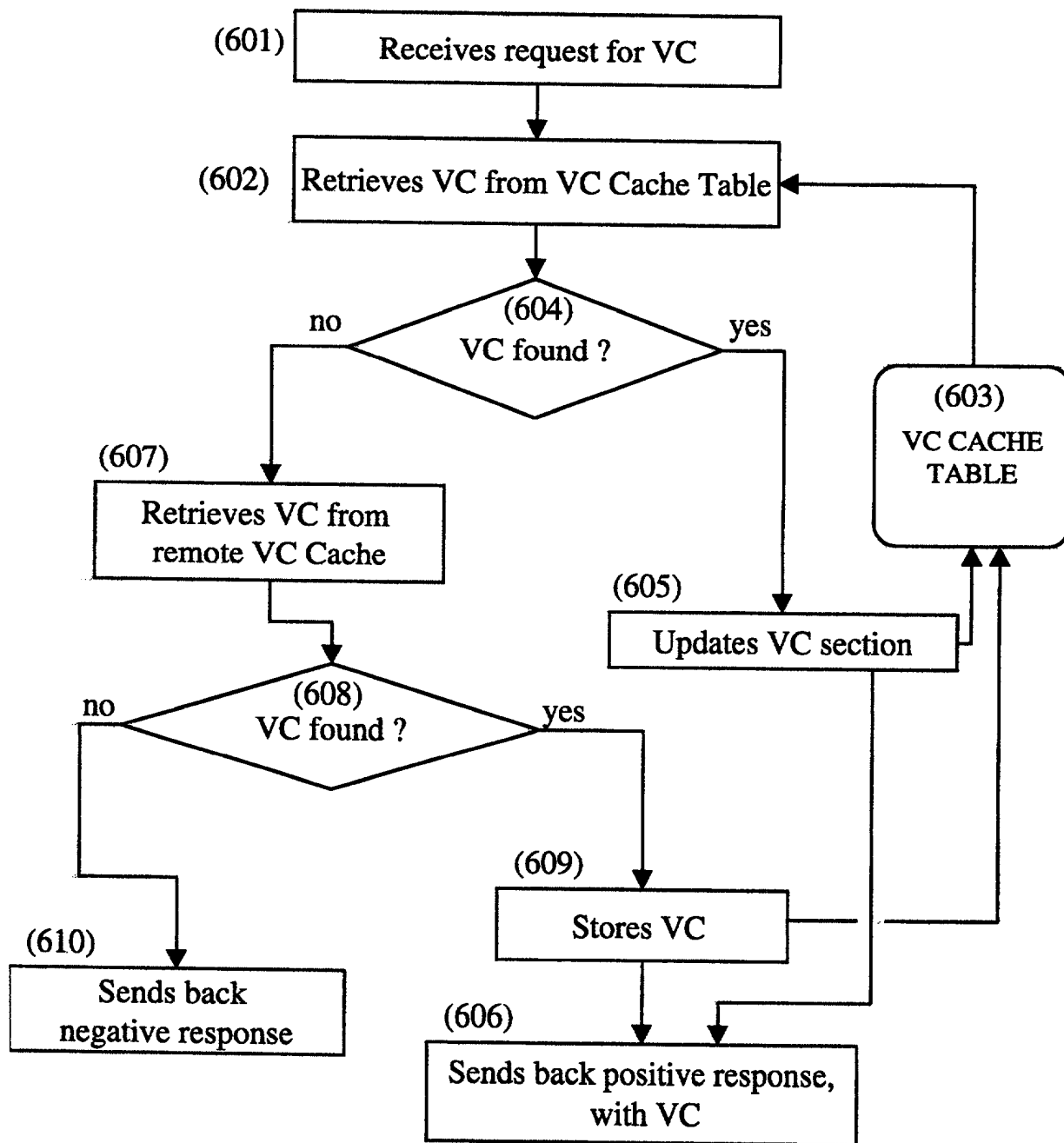
Virus-free Certificate section (508)
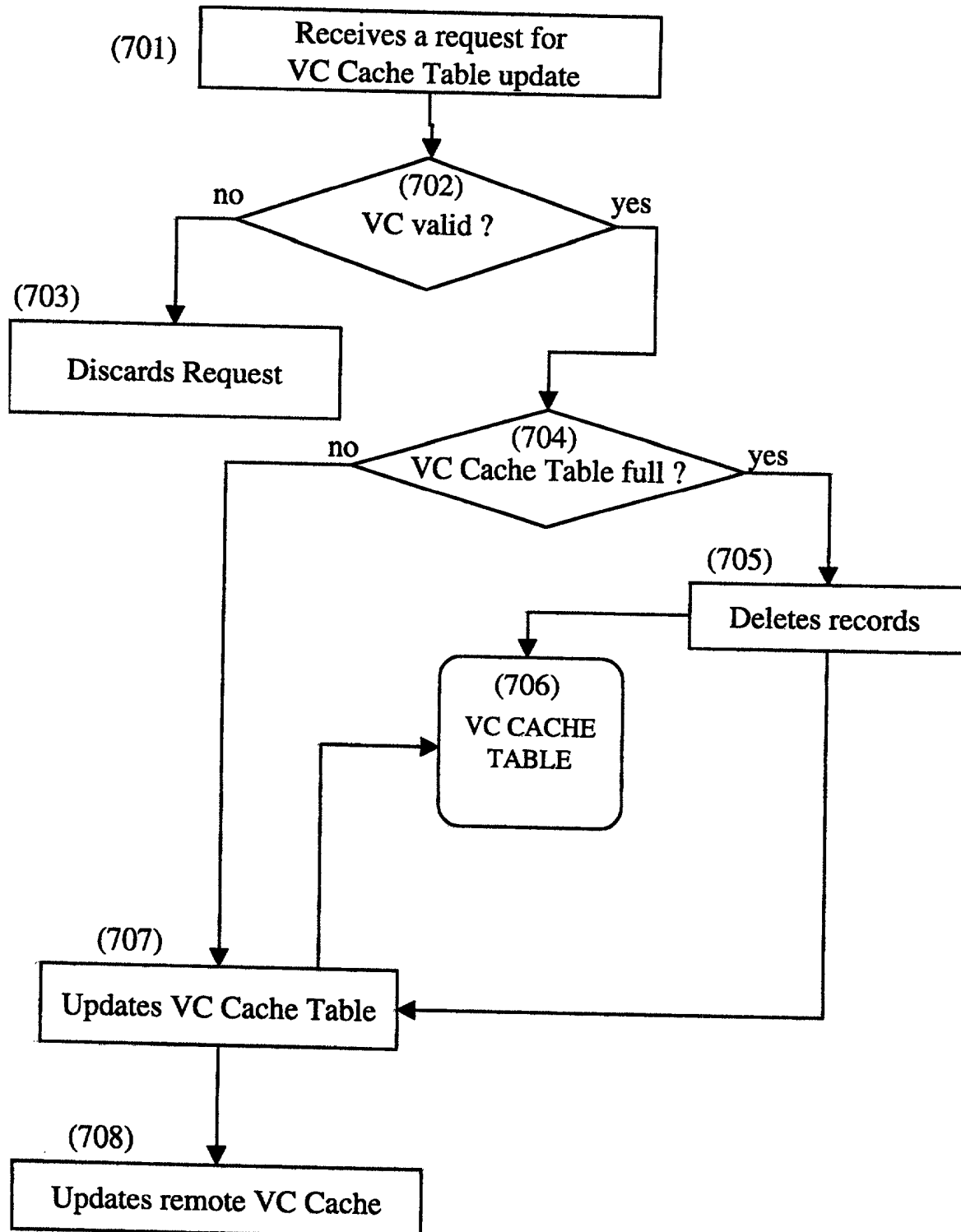
Virus-free Certificate (509)

Last_Date (510)

Number_Hits (511)

Record (502)

...

(601) Receives request for VC

(602) Retrieves VC from VC Cache Table

(604) VC found ?

no

yes

(607) Retrieves VC from remote VC Cache

(603) VC CACHE TABLE

(605) Updates VC section

(608) VC found ?

no

yes

(609) Stores VC

(610) Sends back negative response

(606) Sends back positive response, with VC

(701) **Receives a request for VC Cache Table update**

(702) **VC valid ?** — no / yes

(703) **Discards Request**

(704) **VC Cache Table full ?** — no / yes

(705) **Deletes records**

(706) **VC CACHE TABLE**

(707) **Updates VC Cache Table**

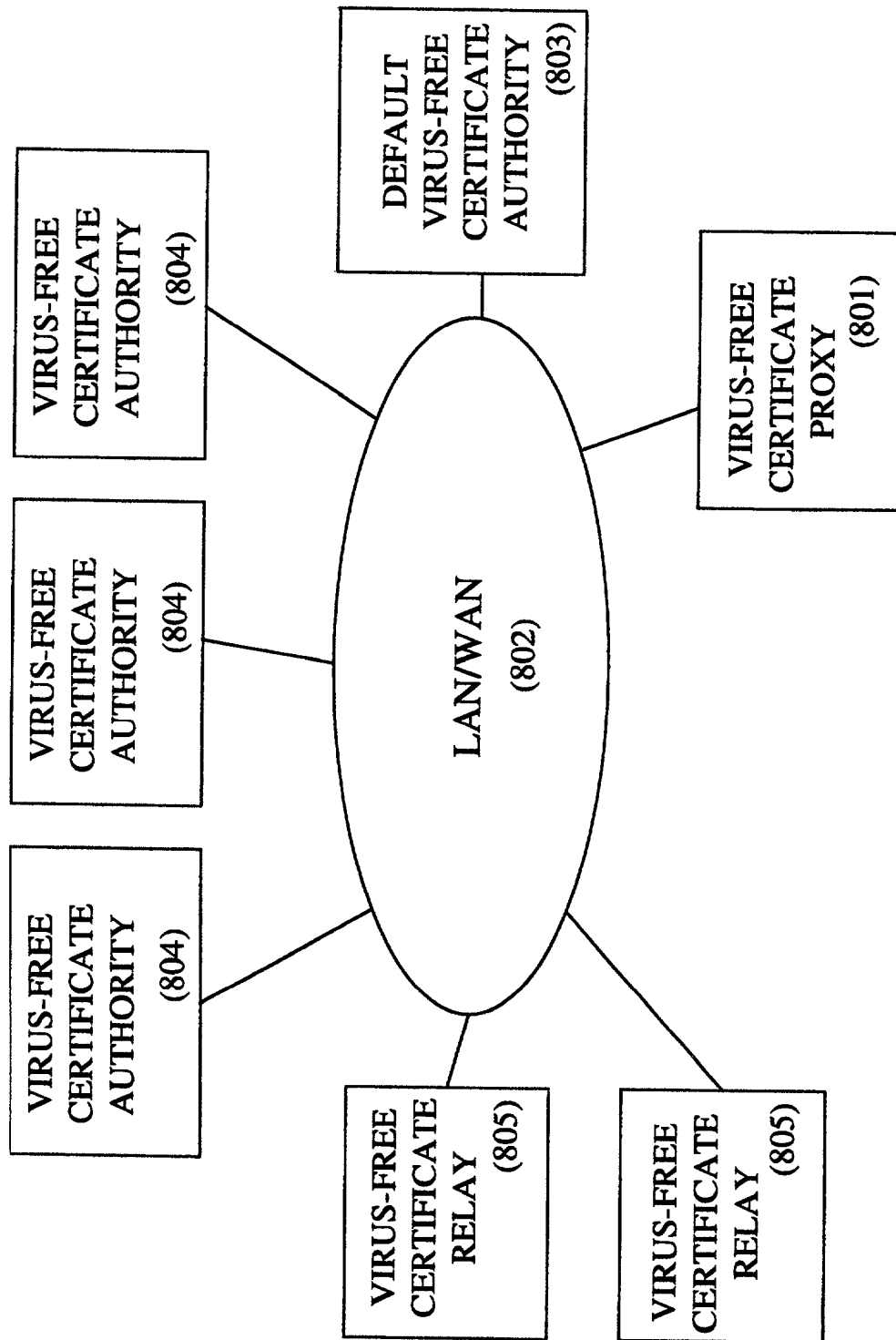(708) **Updates remote VC Cache**

FIG. 8

Virus-free Certificate Proxy Table (901)

Record (902)

File Template section (903)

File_Provider (904)

File Template section (905)

File_Identity (906)

File_Name (907)

File_Type (908)

File_Size (909)

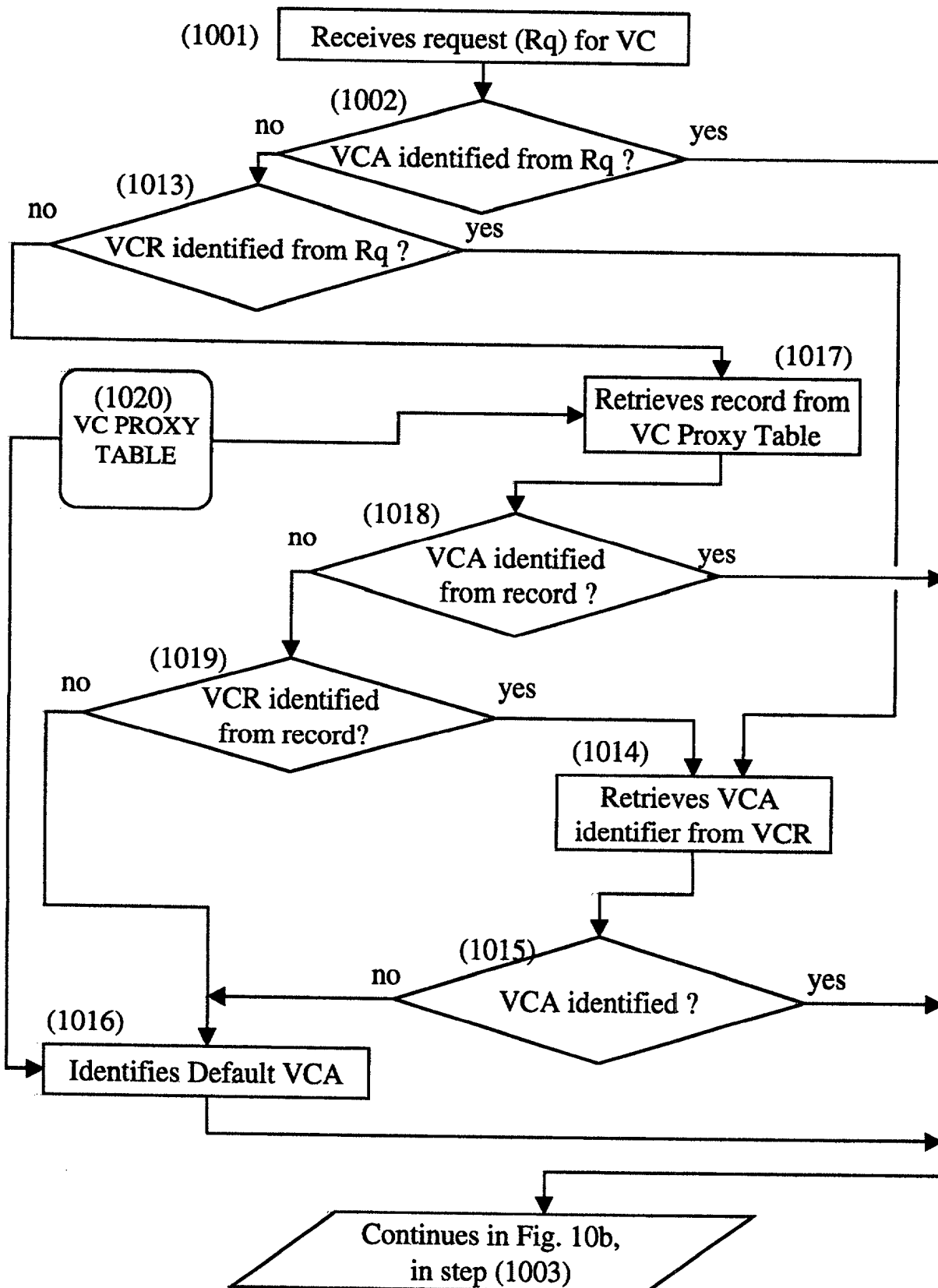File_CRC (910)

Virus-free Certificate Authority section (911)

VCA_Id (912)

VCR_Id (913)

AV_Checker_List (914)

Record (902)

. . .

(1001) | Receives request (Rq) for VC

(1002) VCA identified from Rq ?
no — yes

(1013) VCR identified from Rq ?
no — yes

(1020)
VC PROXY
TABLE

(1017) Retrieves record from VC Proxy Table

(1018) VCA identified from record ?
no — yes

(1019) VCR identified from record?
no — yes

(1014) Retrieves VCA identifier from VCR

(1015) VCA identified ?
no — yes

(1016) Identifies Default VCA

Continues in Fig. 10b, in step (1003)

(1003) | Retrieves VC from VCA, using short request

(1004) VC retrieved ? — no / yes

(1006) VCA requires the file ? — no / yes

(1007) | Retrieves VC from VCA, using full request

(1008) VC retrieved ? — no / yes

(1009) VCA is a Default VCA ? — no / yes

(1012) | Excludes VCA from list of possible VCAs

Goes back to Fig 10a, in step (1002)

(1010) | Stores error

(1011) | Sends negative response

(1005) | Sends positive response, with VC